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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

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In the Matter of	)	
	)	
Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them	)	
	)	
and	)	PR Docket No. 92-235
	)	
Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Radio Services	)	

REPLY

Hewlett-Packard Company ("HP"), by its attorneys, hereby replies to the Oppositions and Comments that were filed with respect to HP's Petition for Reconsideration and Clarification ("HP's Petition") in the above-captioned proceeding.

Four parties address HP's Petition: SpaceLabs Medical Products, Inc. ("SpaceLabs"), the Industrial Telecommunications Association, Inc. ("ITA"),[1] Aeronautical Radio, Inc. ("ARINC"), and the Personal Communications Industry Association ("PCIA"). Although there is some overlap of points in these pleadings, the principal focus of each is different and each is addressed separately below.

A. SPACELABS SUPPORTS HP'S REQUEST FOR COMMISSION INTERVENTION TO PROTECT VERY LOW MEDICAL TELEMETRY OPERATIONS IN THE 450-470 MHZ PLMR BAND.

SpaceLabs, the other major supplier to hospitals of medical telemetry equipment that employs the former Business Radio Service offset channels in the 450-470 MHz band

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[1] The last day for filing oppositions to HP's Petition was June 19, 1997. PCIA, ARINC, and SpaceLabs served their pleadings by mail, thereby allowing an additional 3 days (from June 29, 1997) for which to submit this Reply. ITA's pleading was not served on HP, as required under Section 1.429(f) of the Commission's rules and only came later to HP's attention from a precautionary search of the Commission's docket file. Particularly given ITA's *ad hominem* attack on HP, see, discussion at Section B of this Reply *infra*, its failure to comply with the Commission's rules should not be sanctioned. In any event, as the pleading was not served, time periods for reply should not apply.

shares HP's view that leaving the resolution of low power issues to private frequency coordinator groups has not worked.

As SpaceLabs points out, the failure of the coordinators to develop a solution that accommodates the needs of very low power biomedical telemetry users in the band is best evidenced by the "consensus" plan that was recently submitted by the Land Mobile Communications Council ("LMCC"), "which, in its ultimate effect, proposes the complete abandonment of biomedical telemetry."[2] HP and SpaceLabs have subsequently submitted a joint letter that provides a more detailed analyses of LMCC's "consensus" plan, a copy of which is attached hereto as Attachment A.

B. ITA WOULD HAVE THE COMMISSION TAKE NO REGARD OF MEDICAL TELEMETRY IN THE 450-470 MHz BAND.

ITA takes the extraordinary position that the medical telemetry community: (1) should never have used frequencies in the 450-470 MHz band in the first place; (2) in doing so, acted foolishly and at its own risk, and (3) is, therefore, not entitled to any consideration in this band. In taking this position, ITA does more than challenge HP's Petition, it challenges the very premise of the Commission's many decisions in this proceeding that medical telemetry, and other low power uses of the band, should be protected. Indeed, ITA appears to challenge 25 years of Commission authorization for medical telemetry in the band. This position is both substantively and procedurally without merit; in one sense, ITA has filed a petition for reconsideration 25 years too late.

ITA's assertions fly in the face of the Commission's express recognition of the continuing need for medical telemetry in the band[3] and its call for the PLMR community to develop a consensus plan that accommodates medical telemetry and other very low power users in the 450-470 MHz band.[4] Had ITA wished to challenge this conclusion or the Commission's directive to the frequency coordinators, it should have sought to do so before. ITA did not; instead, in its own Petition for Clarification and/or

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[2] See SpaceLabs' Comments at 2.

[3] Second Report and Order, Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them ("Second Report and Order (Refarming)"), 6 Comm Reg. 730, 750 (1997); see also Freeze on the Filing of High Power Applications for 12.5 kHz Offset Channels in the 450-470 MHz Band, 10 FCC Rcd 9995 (1995) (public interest requires protection of critical medical telemetry operations on these frequencies). ITA takes note of the freeze in its Opposition, but then appears to dismiss it as a matter of little import. ITA Opposition at 8.

[4] Id. at 751.

Reconsideration, ITA merely stated that it agreed with the Commission that accommodating such interests "is not a 'trivial matter'."[5] Now, ITA's very strident words make clear the reason why it has been fruitless to try to reach an industry solution for the medical telemetry issue. When key players in the process have acted under the belief that no accommodation is necessary and, in fact, have offered none, there can be no solution.[6]

In an attempt to buttress its position, ITA contends that because, under the former rules, use of the 12.5 kHz offset was permitted on a secondary, non-interference basis, HP should have "anticipated the problem years ago" and secured another allocation of frequency for medical telemetry devices.[7] ITA, however, ignores the key fact that, the medical telemetry's "secondary" status on the 12.5 kHz offsets was only *vis-a-vis* higher-powered operations that operated with at least 12.5 kHz separation from medical telemetry systems.

Indeed, as reflected in the Commission's 1973 decision authorizing medical telemetry's use of the offset channels, there was extensive analysis of potential interference from such adjacent channels. The Commission determined at that time that medical telemetry could make effective non-interfering use of the frequencies "through the use of selective modulation and filtering techniques and alarm circuitry."[8] Medical telemetry's use of the offset channels was not authorized because it was thought that it would not be possible for it to use the band without suffering destructive interference, but because it was thought it would be compatible with other uses.

In the 25 years since the Commission authorized medical telemetry's use of the 12.5 kHz offsets, HP's experience has demonstrated the accuracy of the Commission's prediction. As the Commission anticipated, there have been problems of interference

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[5] See ITA's Petition for Clarification and/or Reconsideration, filed May 19, 1997, at 12.

[6] ITA is also wrong in suggesting that HP has ever insisted that the only solution to the accommodation of low power and high power operation in the band is the creation of a very low power zone. HP has asserted its belief (to which we believe most industry representatives concur) that the most efficient solution is to create a very low power zone in the band. Any other solution will require that a far greater number of channels be maintained for low and very low power operations. HP is willing to discuss either approach.

[7] ITA Opposition at 8-9.

[8] First Report and Order, Amendment of Parts 2 and 91 of the Commission's Rules to Permit Medical Telemetry and Other Low-Power Uses of Offset Frequencies in the Business Radio Service, 41 FCC 2d 8, 9 (1973).

from very high power operations that are in close proximity to medical telemetry, even at 12.5 kHz separations. Yet the life-saving technology has flourished in the 450-470 MHz band within these constraints, as the Commission had intended.[9]

It is nonsense for ITA to suggest that HP, or the thousands of hospitals that employ medical telemetry equipment, "should have...anticipated"[10] refarming or that the rules would be changed to permit high power operation on the offset channels. Nor can ITA suggest in good conscience that, somehow, the medical telemetry community is at fault for making use of the offset channels pursuant to the low power restrictions that have been in place. It is equally absurd for ITA to suggest that because of medical telemetry's "widespread popularity,"[11] HP could have, as if by *fiat*, secured another spectrum allocation for critical care medical telemetry devices. As ITA certainly must know, spectrum is not so easily gained.

In fact, prior to the time the First Report and Order[12] was issued in this proceeding, HP and other manufacturers of medical telemetry have been trying to gain other suitable spectrum to supplement their 450-470 MHz frequencies.[13] This effort has met fierce resistance from other industry groups seeking to protect what they regard as their spectrum. Like ITA, other spectrum users find much that is commendable about medical telemetry, as long as it operates somewhere other than in "their" spectrum.

C. ARINC IS INCORRECT IN ASSERTING THAT INCREASING THE POWER OF CO-CHANNEL STATIONS FROM 2 WATTS TO 20 WATTS WOULD NOT CAUSE INTERFERENCE TO MEDICAL TELEMETRY.

ARINC's asserts that raising the power of co-channel operations by 10-fold to 20 watts shouldn't interfere with sensitive medical telemetry equipment which operates at 4 milliwatts.[14] Simply put, that assertion ignores the laws of basis radio physics. Thus, while a two-watt transmitter operated at very close proximity to a

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[9] See, Second Report and Order (Refarming), supra, at 750.

[10] ITA Opposition at 8.

[11] ITA Opposition at 8. To say the least, this is an odd characterization of a device that is strapped to a cardiac patient's chest to monitor vial signs.

[12] Report and Order and Further Notice of Proposed Rulemaking, Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, 10 FCC Rcd 10076 (1995).

[13] See Petition for Rule Making filed by the Critical Care Telemetry Group, ET Docket No. 95-177 (Dec. 23, 1994).

[14] ARINC Opposition at 3.

medical telemetry unit can cause interference, the area of potential interference is limited, both the transmitter's low power and other natural protection created by hospital walls. Raising the power of a potentially interfering signal to twenty watts multiplies the distance of required separation to avoid interference by a factor of 3.

ARINC goes on to suggest that, at least, those frequencies designated for airport use should be free from low power constraints, while the question of where to put medical telemetry is left to be resolved. But the very frequencies that ARINC wants free of medical telemetry are the same offset channels that, heretofore, have been reserved solely for medical telemetry use, so as not to risk interference even from other low power use of the same frequency, which the Commission has recognized could occur.[15] Given the relative proximity of airports to hospitals in many urban areas, ARINC's proposed use of these frequencies, not just at 2 watts, but at 20 watts, would often preclude their use by hospitals located in the same city.

ARINC's desire to secure additional frequencies for airport use is understandable, but any public benefits of such expansion do not outweigh the public harm that would be caused by effectively shutting down critical care monitoring systems that employ the same channels in nearby hospitals.

D. PCIA IS QUITE PREMATURE IN ASSERTING THAT A "CONSENSUS" HAS BEEN REACHED WITH RESPECT TO LOW POWER USE OF 450-470 MHz.

In an odd, but telling juxtaposition of pleadings, ARINC complains that HP should have allowed more time for negotiations to reach an industry consensus,[16] while PCIA says that industry "consensus" has been reached.[17]

In response to ARINC's assertions, HP and SpaceLabs have made every effort to try to engage the coordinators in negotiations. Immediately after the First Report and Order in this proceeding was issued in 1995, the two companies contacted the coordinators to try to reach agreement on low power issues. After several unproductive meetings, at which there was no substantive response to the HP/SpaceLabs' proposals,

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15 See Second Report and Order, Amendment of Part 91 of the Commission's Rules and Regulations to Expand the Permissible Uses of 450-470 MHz Off-Set Frequencies in the Business Radio Service, 56 F.C.C.2d 1004, 1008 (1975); former Section 90.238(e), 47 C.F.R. § 90.238(e) (1994).

16 Id. at 4-5.

17 PCIA Opposition at 7.

the companies were told by the coordinators that they were not interested in discussing the low power subject at that time. The minutes of the last meeting in 1995 to which medical telemetry representatives were invited reflect this position and are attached hereto as Attachment B.

Without the participation or knowledge of medical industry representatives, LMCC then developed a low power plan to accommodate its constituent members. The outline of that plan was submitted to the Commission by ITA in its "blueprint" for refarming.[18] When representatives of LMCC finally met with medical telemetry representatives, that outline had been mildly refined to accommodate other low and medium power interests represented by the coordinators. The plan presented to HP appears to be the same one that LMCC subsequently submitted to the FCC as its "consensus" plan.

While several meetings and telephone conferences were held, beginning in late March through April and May, 1997, the "discussions" in the end came down to the coordinators recommending that the medical telemetry community look elsewhere for spectrum. No one in these discussions seriously suggested that the plan submitted would accommodate even existing medical telemetry operations; the coordinator representatives essentially took the position that such accommodation was not possible in the band. On that basis, HP reported to the Commission that an impasse had been reached.

As for PCIA's assertion that the LMCC's submission represents an industry "consensus," this reflects the coordinators view that an industry consensus means an agreement among themselves. They have determined that medical telemetry cannot be accommodated in the 450-470 MHz band and most look elsewhere for spectrum.

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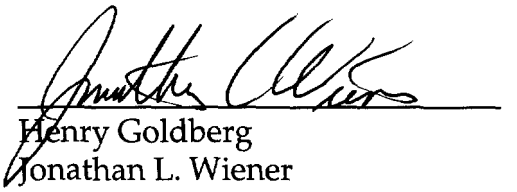
[18] Letter to Michele C. Farquhar, Chief, WTB from Mark E. Crosby, President and CEO of ITA (January 21, 1997), at 6.

CONCLUSION

Negotiated solutions can only work when all sides feel a reason to negotiate. Up to this point, that has not been the case for the frequency coordinators. Direct Commission intervention on the process is needed and is long undue.

Respectfully submitted,

By: 

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July 2, 1997

ATTACHMENT A
Ex Parte Presentation
PR Docket No. 92-235

June 24, 1997

BY HAND

Daniel Phythyon
Acting Chief
Wireless Telecommunications Bureau
Federal Communications Commission
2025 M Street, N.W., Room 5002
Washington, DC 20554

Re: LMCC's "Consensus" Plan

Dear Mr. Phythyon:

Hewlett-Packard Company ("HP") and SpaceLabs Medical, Inc. ("SpaceLabs") hereby respond to the "consensus" plan for low power use of the 450-470 MHz Private Land Mobile Radio ("PLMR") band that was submitted in this proceeding by the Land Mobile Communications Council ("LMCC") on June 4, 1997.

A. OVERVIEW: LMCC'S PLAN WOULD FORCE THE SHUT DOWN OF CRITICAL CARE MEDICAL TELEMETRY SYSTEMS.

In simple terms, LMCC's plan would force many hospitals nationwide to shut down systems that monitor the cardiac and other vitals functions of ambulatory, but seriously ill, cardiac patients. If unable to perform such monitoring, physicians would have no practical alternative to keeping their cardiac patients confined to their hospital beds for a longer period, without being able to monitor their cardiac status during the critical time when they are beginning to walk and become physically active.

Not only would the length and cost of the patients' hospital stays increase, but a key tool in assuring a successful and timely recovery for cardiac patients would become unavailable. Moreover, millions of dollars of public and private hospital investment in critical-care telemetry monitoring systems would be lost. It should be self-evident that these results would be contrary to the public interest.

B. LMCC'S PLAN FAILS TO ADDRESS THE NEEDS OF MEDICAL TELEMETRY.

LMCC has submitted a plan that, by its own description of "target markets," is intended to meet the needs of its frequency coordinators' constituents. Despite expressed concern for the very low power requirements of critical care medical technologies, LMCC has not designated a single channel that is limited to very low power operations. Instead, it has redefined "low-power" to include even more powerful transmitter than in the past. While LMCC suggests that critical care medical telemetry operations might be able to use some of the spectrum that it has allocated for other "low power" uses, LMCC offers no serious analysis of the usability of these frequencies in the potential interference environment that would be created or of the

effect of its plan on existing medical telemetry use. With respect to the latter point, LMCC does not even have the current information on deployment of existing medical telemetry systems that it would need to make such an analysis.

LMCC's plan would replace the 267 offset channels that have been available for medical telemetry operations and other low power users in the Business Radio Service, plus low power offsets that were available in other services,[1] with 80 low power channels and 100 "mid-power" channels available to users in all services in the consolidated Industrial/Business Pool.[2] Only a limited number of these new channels are likely to be usable by critical care telemetry.

In addition, most of the LMCC-proposed channels do not coincide with the former low-power offset channels presently used for critical-care telemetry. LMCC would have hospitals undertake a massive effort of re-crystaling and testing thousands of transmitters. Even if hospitals could afford to undertake this effort for fewer usable channels than they have now, the effort could not be completed within the seven-month period specified in the Commission's Second Report and Order.

More particularly, there are severe problems with the channels that the LMCC proposes for low-power, as set forth below:

1. The "Mid-Power"(5 Watt Mobile, 20 Watt Base Stations In Designated Urban Areas, No Limits Outside These Areas) Could Not Be Used For Medical Telemetry.

The 50 channel pairs (100 channels) on which LMCC would permit 5-watt mobile and 20-watt base stations in designated urban areas[3] would create interference for UHF critical-care telemetry systems (which operate at less than 5 mW) over such great distances as to make most of these channels effectively unusable for telemetry.[4] Rather than crafting a solution that accommodates very low-power operations (*e.g.*, less than 120 mW), the LMCC plan essentially would eliminate existing low-power (<2W)

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[1] Some of these channels, of course, are not usable at particular locations due to interference, even under the pre-refarming channelization plan.

[2] Channels that are 6.25 kHz adjacent to the designated low power channels practically could serve no more than a guardband function, among other reasons, because of their proximity to much higher powered operations only 6.25 kHz away.

In addition, the frequencies near airports mentioned by LMCC that are permitted for medical telemetry use are not limited to low power operations and, therefore, are not likely to be usable by hospitals.

[3] There would be no power restriction on these channels outside urban areas under LMCC's proposal.

[4] The same problems would render the 14 channel pairs (28 channels) recommended to be subject to this limitation in the Public Safety Pool unusable for medical telemetry, as would be the case with respect to all other offsets in the Public Safety Pool where it would appear that no power limitation would apply.

channels to make even more channels available for high-power operations, which are incompatible with very low-power critical care telemetry.

2. Interference Can Also Be Anticipated On Many Of The Channels On Which 2 Watt Limits Would Be Maintained.

The other 80 former offset channels (40 channel pairs) on which 2 watt limits would be maintained might be usable in particular locations, depending upon the geographic separation between the 2 watt units and hospital locations and other propagation factors that would have to be considered on a case by case basis. If the interference environment is no worse than currently exists on the former Business Radio offsets, this could mean that at any particular location, perhaps two-thirds (50-55) of the individual channels might be usable, which is well below what is necessary to serve existing hospital requirements at many locations.

There is a strong likelihood, moreover, that by grouping "low power" (<2w) users from all services into a limited number of channels, the majority of which would be assigned for itinerant use, the chances of interference to very low power operations on those channels (plus potential interference from higher powered signals with 12.5 kHz separations) will be much greater than critical-care telemetry has experienced in the past. Even if the interference on these channels is intermittent, depending upon their variable use by itinerant workers, hospital requirements for reliable continuous cardiac monitoring would preclude the use of these channels in many locations.

3. The Few Channels Most Likely To Be Usable For Medical Telemetry Would Also Require That Existing Units Be Recrystaled To Employ Them.

The twenty (20) channels that are specified for coordinated non-voice communications seem most likely to be usable for medical telemetry, are channels formerly assigned to the former Manufacturers Radio Service. We understand that these frequencies are already employed by manufacturers for crane operations and robotic functions, so that existing such units would not require change.[5] That may be helpful for manufacturers, but hospitals could not use these frequencies without changing crystals and re-testing their existing units — a costly and time-consuming process — and even then they would not be assured the ability to use their telemetry units without experiencing destructive interference.

C. IT IS RECKLESS FOR LMCC TO SUGGEST THAT THE "TRANSITION PERIOD" BE ADVANCED.

LMCC essentially concedes that its plan would not accommodate even existing medical telemetry operations in the 450-470 MHz band and suggests the allocation of

[5] The central alarm station channels also have generally not been used for medical telemetry operations.

new vacant spectrum to meet such needs. Under these circumstances, its suggestion that the period of time for which high-powered operation on channels formerly reserved for low power use should be advanced and that the seven month "transition period" should start as of the date of its filing can only be described as reckless.[6]

D. CONCLUSION: IT IS MORE EVIDENT THAN EVER THAT THE COMMISSION MUST INJECT ITSELF DIRECTLY INTO THE DECISION MAKING PROCESS.

We have previously urged the Commission that the decisions that need to be made regarding low power operations in the 450-470 MHz band cannot be left to the coordinators and that the Commission must involve itself more directly in resolving the issues. Unfortunately, nothing makes this point more clearly than LMCC's submission itself.

Respectfully submitted,

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cc: See attached certificate of service.

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[6] Further, any request by LMCC to shorten the "transition period" should have been raised in the form of a petition for reconsideration of the Commission's Second Report and and Order in this proceeding.

ATTACHMENT B

LMCC Radio Service
Consolidation Task Force Meeting
October 19, 1995

Attendees:

Larry A. Miller	AASHTO
Jonathan Wiener	Hewlett Packard
Diane Gaylor	Space Labs
Chris Allman	AAR
Sean Stokes	UTC
Ken Keane	ITLA/MRFAC

The subject of the Radio Service Consolidation was briefly discussed. This issue was considered briefly due to the limited number of participants.

Jonathan Wiener presented the position of Hewlett Packard concerning the need for a block of UHF frequencies for low power use. A suggestion was made that the issue would be better addressed after the issue of radio service consolidation was finalized.

The limited turnout and perceived lack of interest by the LMCC member organizations makes the need for future meetings questionable. It is apparent that the LMCC, which did not address the consolidation issue in its previous comments and reply comments to Dockets 91-170 and 92-235 will not reach a unanimous position on consolidation.

There are no further meetings of the Radio Service Consolidation Task force planned at this time. If, however, a sufficient number of LMCC members feel another meeting is appropriate, Larry Miller will be happy to make the arrangements.

CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the foregoing Reply were sent by hand and first-class mail, postage prepaid, this 2nd day of July, 1997, to each of the following:

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